HeatRisk - Understanding HeatRisk

The purpose of the NWS experimental HeatRisk product is to help you understand what forecasted heat means to you. To make it easier to understand, the HeatRisk is divided into five categories:

HeatRisk Values When the HeatRisk value is:	Risk of Heat Effects …the risk of heat effects are:	Level of Heat Concern …as symbolized by this color:
0	Very Low	Green
1	Low	Yellow
2	Medium	Orange
3	High	Red
4	Very High	Magenta

Simply put, the higher the value, the greater the level of heat concern would be for that location. If both the overnight lows and daytime highs are exceptionally warm for that date at a given location over a period of at least 48 hours, at levels that pose an elevated risk for heat complications, the highest level of 4 for HeatRisk is achieved.

Essentially when HeatRisk values are 1 or greater, heat is considered to be of concern – at first for those who are extremely sensitive to heat, then for everyone as HeatRisk values get to the highest levels. For example, a HeatRisk value of 0 represents no *elevated* risk for heat concerns; a HeatRisk value of 2 represents a moderate potential risk for members of heat sensitive/vulnerable groups; while a HeatRisk value of 3 represents a high potential risk of heat effects for anyone without proper hydration and adequate cooling.

The NWS has assigned a specific color to each HeatRisk category to make it easier for people to understand quickly whether heat is reaching a high enough level to create heat concerns for their unique situation. Each HeatRisk category corresponds to a different level of potential heat concern. The five levels of heat concern and what they mean are shown in the table below.

Numerical Value	Meaning	Who/What is at Risk?	How Common is this Heat?	For those at risk, what actions can be taken?
0	• Level of heat poses **little to no risk**	• No elevated risk	• Very Common	• No preventative actions necessary
1	• Heat of this type is **tolerated by most**; however there is a **low risk for**	• Primarily those who are extremely sensitive to heat	• Very Common	• Increase hydration • Reduce time spent outdoors or stay in the shade when

	sensitive groups to experience health effects			the sun is strongest • Open windows at night and use fans to bring cooler air inside buildings
2	• **Moderate risk for members of heat sensitive groups** to experience health effects • **Some risk for the general population who are exposed to the sun and are active** • For those without air conditioning, **living spaces can become uncomfortable during the day**, but should cool below dangerous levels at night	• Primarily heat sensitive or vulnerable groups, especially those without effective cooling or hydration, or those not acclimated to that level of heat (i.e. visitors) • Some transportation and utilities sectors	• Fairly common most locations • Very common in southern regions of country	• Reduce time in the sun between 10 a.m. and 4 p.m. • Stay hydrated • Stay in a cool place during the heat of the day • Move outdoor activities to cooler times of the day • Open windows at night
3	• **High Risk for much of the population who are 1) exposed to the sun and active or 2) are in a heat sensitive group, or 3) visiting a warmer climate and exposed to sun/heat** • **Dangerous to anyone without proper hydration or adequate cooling** • **Poor air quality** is possible • **Power interruptions** may occur as electrical demands increase	• Much of the population, especially people who are heat sensitive and those without effective cooling or hydration • Those exposed to the heat/sun at outdoor venues • Transportation and utilities sectors	• Uncommon most locations • Fairly common in southern regions of country	• Try to avoid being outdoors in the sun between 10 a.m. and 4 p.m. • Stay hydrated • Stay in a cool place especially during the heat of the day • If you have access to air conditioning, use it. Even a few hours in a cool location can lower risk. Fans may not be adequate • Cancel outdoor activities during the heat of the day
4	• **Very High Risk for entire population** • **Very dangerous to anyone without**	• Entire population is at risk. • For heat sensitive groups, especially	• Rare most locations • Occurs up to a few times a year in	• Avoid being outdoors in the sun between 10 a.m. and 4 p.m.

	proper hydration or adequate cooling. • **This is a multi-day excessive heat event**. A prolonged period of heat is dangerous for everyone not prepared. • **Poor air quality** is likely. • **Power outages are increasingly likely** as electrical demands may reach critical levels.	people without effective cooling, **this level of heat can be deadly**. • Most Transportation and utilities sectors	southern regions of country, especially the Desert Southwest	• Stay hydrated • Stay in a cool place, including overnight • If you have access to air conditioning, use it. Even a few hours in a cool location can lower risk. Fans will not be adequate • Cancel outdoor activities during the heat of the day

Because heat affects people and various economic sectors in very individual and different ways, the level of HeatRisk that is important to you may be different than for another person. It also may be different depending on what activities you are engaged in, or medication you are on.

So for someone who is in a heat sensitive group, monitoring the HeatRisk forecasts and taking specific actions to avoid adverse heat effects when the forecast is calling for an “orange” day or greater would make sense for them. For someone not in a heat sensitive group with routine access to air conditioned spaces, “red” or “magenta” might be the only levels they would pay attention to and take specific actions to avoid adverse heat effects. In this way HeatRisk allows for decisions to be made based on an individual’s heat tolerance and situation and provides recommendations of appropriate actions to be taken when that level is forecast.

Your Level May Change As Your Activities Do

The level of HeatRisk that is important for you is not always the same. For example, if you decide to take up jogging in July during your lunch break, you may want to monitor the forecast for “orange” HeatRisk forecasts for the first few weeks until you get used to both jogging and the heat of the day. You are initially more heat vulnerable due to this change in your activities and exposure. So initially, when “orange” levels or greater are forecast, you might follow the suggested action of moving the time you jog to before work, and avoid the heat of the day. Once you get used to the heat and to jogging, you may decide to start modifying your activities only when “red” levels are forecast.

Or let’s say you are traveling in April from a northern climate to the desert Southwest for a week of hiking and exploring the landscape in some of our national parks. You haven’t gotten used to temperatures in the 80s or 90s yet, but these temperatures are not that uncommon in the desert regions at this time of year. So, you may want to monitor the forecast for “orange” levels or greater during the vacation to identify days that you may want to begin taking additional steps to ensure proper hydration, schedule activities around the heat of the day, etc. Taking just these few actions may make the difference in having an enjoyable and safe trip. Meanwhile, those that live in the desert Southwest who are not in a heat sensitive group are

doing their normal day-to-day activities when “orange” levels are forecast, because they have already become acclimated to these types of temperatures and are able to stay hydrated and cool.

The HeatRisk product can also be used by industry as well as public health sectors. For example, for a HeatRisk of 3/Red or 4/Magenta, the power industry might anticipate a significantly increased demand and load on the power grid. They could take appropriate actions well in advance of any NWS issued product, based on the NWS forecast of potential heat effects through HeatRisk.

So you can see that the NWS HeatRisk forecast is something that can be adapted to your particular needs and heat sensitivity, allowing you to track the forecast and take the actions that you need to take, when you need to take them.